

Progress on U.S. LHC Accelerator Construction Activities

1st Quarter FY01

Right- First prototype interaction region quadrupole at Fermilab. Cold mass has been completed and is being prepared for cryostating and insertion into the vacuum vessel.



Below- Collared coils for twin aperture separation dipoles (D2), placed in lower half of yoke at BNL.

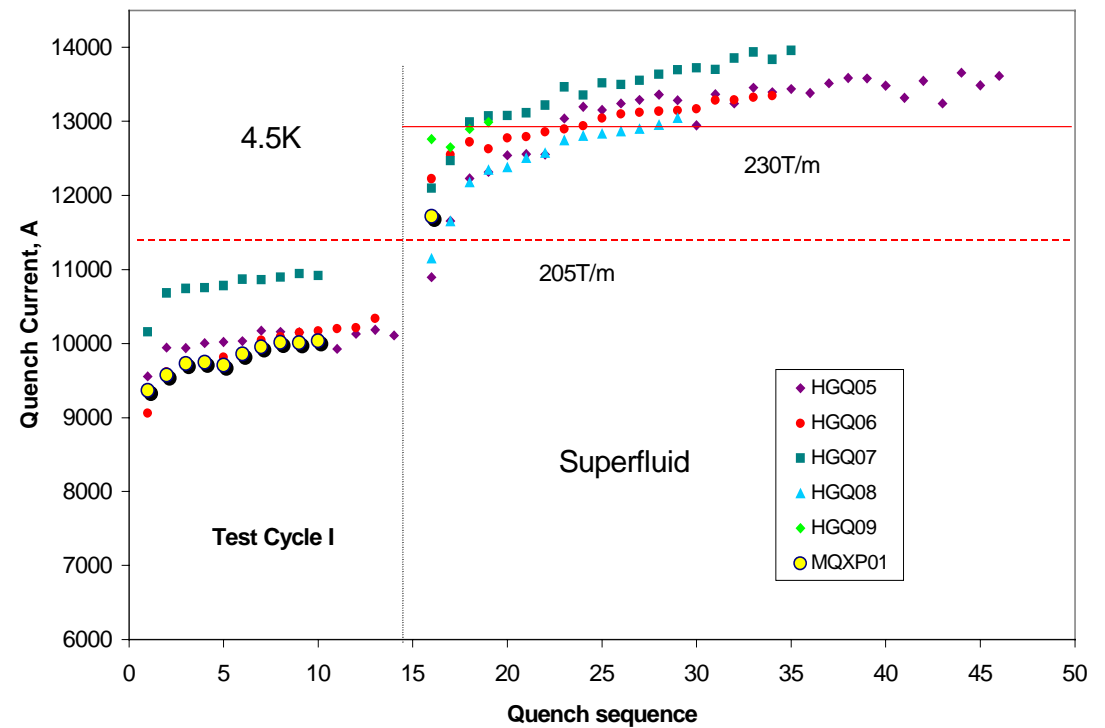


Left- Tack welding of upper and lower cold mass skins on D2 dipole at BNL.

2nd Quarter FY01



Q2P1 Quench Performance



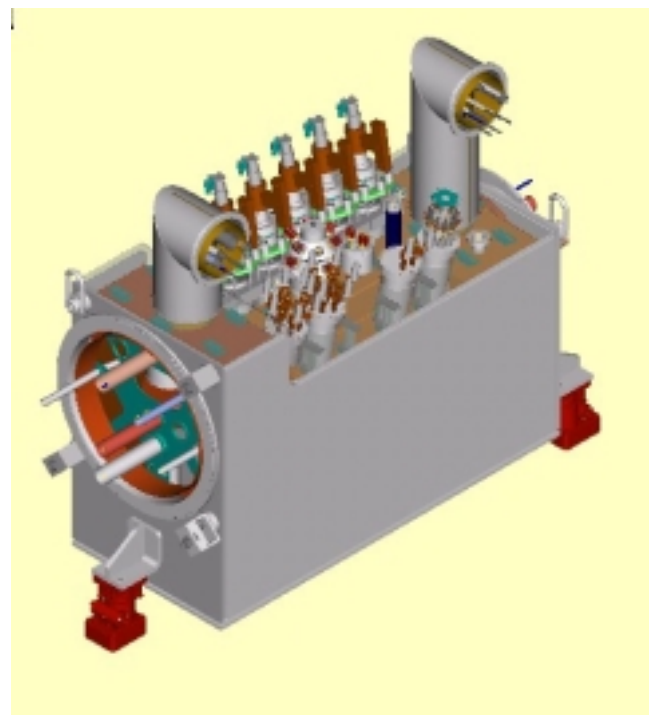
Left- First prototype quadrupole (Q2P1) on test -stand at Fermilab.

Recent test results of this prototype quadrupole (above) show good quench performance at 4.5K and 1.9K (Superfluid), consistent with good model magnets.

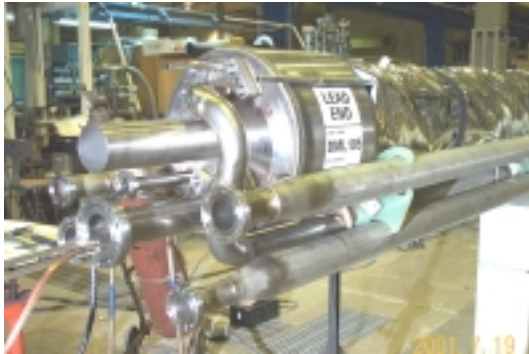


Above- Interaction Region D1 Dipole Magnet being collared at BNL.

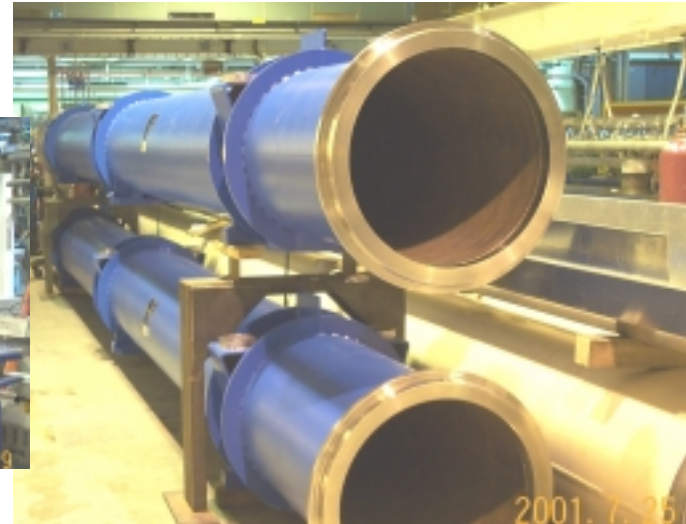
Right- DFBX Feedbox for Interaction Region being designed at LBNL.



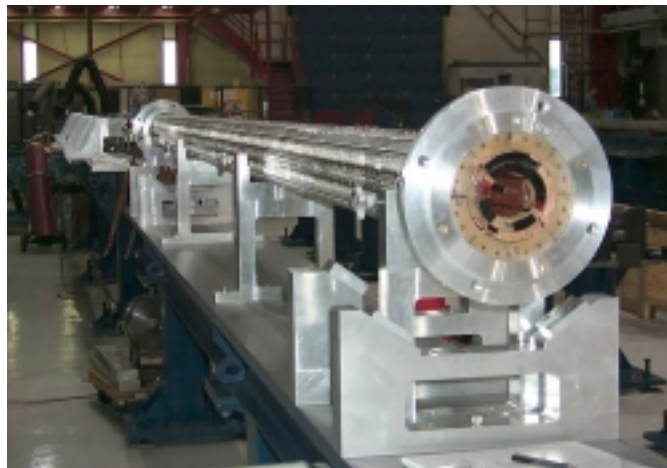
3rd Quarter FY01



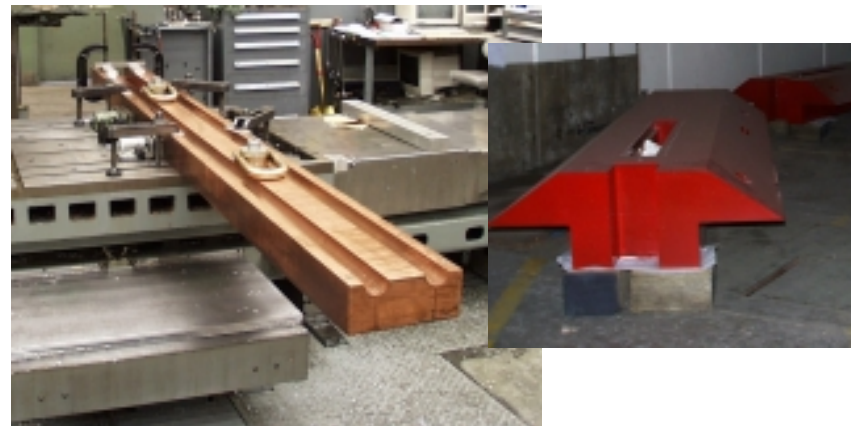
Above- Completed cold mass assembly for the first production D1 dipole at BNL. The lead end is shown on the left and the non-lead end is shown on the right.



Above- Vacuum vessels for D1 magnets at BNL.



Above- Completed collared coil for the first production quadrupole, MQXB01 at Fermilab.

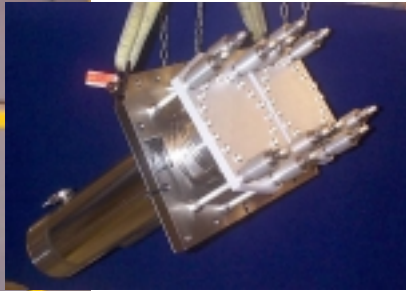


Above (Left) Slots being machined in TAN copper absorber for beam tubes and (Right) Top iron shielding for TAN absorber, both at LBNL.

4th Quarter FY01



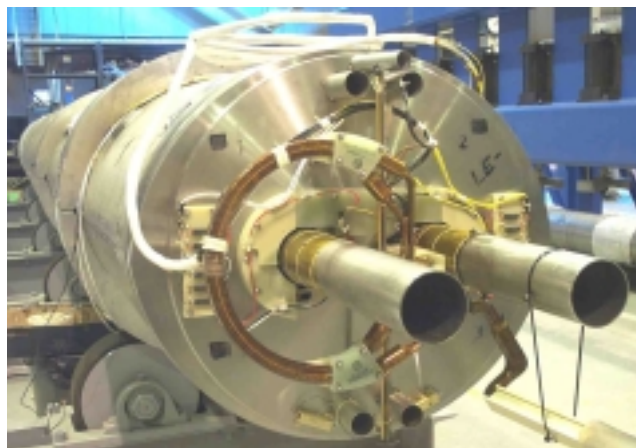
Left- - Two test chambers have been prepared by LBNL for use by industry in performing verification tests on High-Temperature Superconducting (HTS) leads being produced for CERN (inset above). LBNL has used models of the HTS lead to advance the detailed design of the Interaction Region Cryogenic Feedboxes.



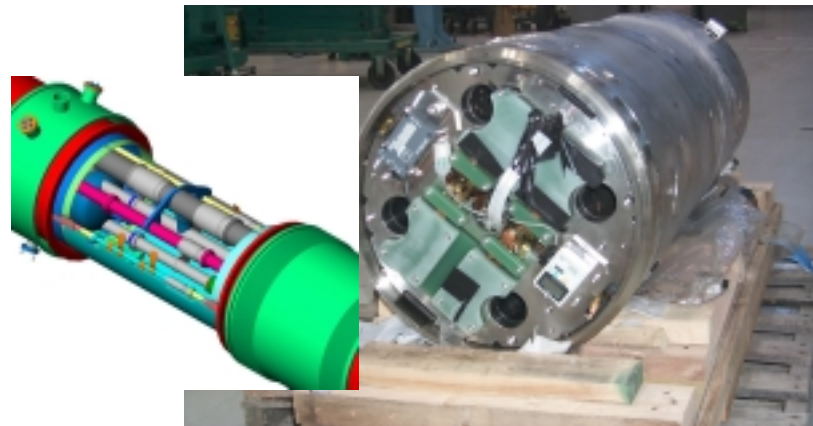
Right- The second production Interaction Region Inner Triplet Quadrupole (MQXB02) coil and collar assembly is shown at Fermilab.



Below- A short model magnet from the KEK Laboratory in Japan arrived at Fermilab for use in working on magnet interfaces. KEK will provide one-half the quadrupoles (MQXA type) that Fermilab will incorporate into complete Interaction Region Inner Triplet assemblies.



Above- Interaction Region twin-aperture dipole magnet (D2) at BNL. Two D2 cold masses are complete, and the third (of eight to be built by BNL) is undergoing electro-mechanical assembly (stage shown above)



Above left (inset)- Computer generated design model of an Inner Triplet magnet interconnect region. The computer model is used by Fermilab and CERN to help resolve vacuum, cooling and mechanical design details related to the beam tube, instrumentation and other components.